

Seed Certification

Seed Certification

- Seed certification is a legally sanctioned system for quality control of seed during seed multiplication and production.
- Seed certification is a scientific and systematically designed process to secure, maintain, multiply and make available seeds of notified and released varieties to the farmers.

Objectives of Seed Certification

1. To ensure genetical identity of a variety.
2. To ensure high degree of physical purity.
3. To ensure high degree of germinability.
4. To ensure freedom from all designation seed borne disease, weeds and other crop seeds.
5. To save farmer from using low quality seed.
6. To decrease cost of production.
7. Provision of a continuing supply of comparable material by careful maintenance.

Seed certification procedure

1) Registration of seed growers

A farmer willing to be a registered seed grower needs to apply to the seed certification agency to enlist as a registered grower. The following information included in the application form.

- Name of the applicant.....
- Address.....
- Name of the crop with variety.....
- Place where a plot or plots situated:
 - ▶ Mouza..... Plot no..... Area (ha).
- Previous registration no. of SCA (If any).

2) Sources of planting stock

The proper planting stock is essential for certified seed production. It provides a pedigree which is the basis for the seed certification concept. Certified seed is usually produce from Foundation seed, although it may be produced from breeder seed.

3) Land

Suitable land is to be selected for different crop varieties as per specification of the seed certification standard.

4) Isolation distance

To avoid about crossing (cross pollination), proper isolation distance on all the sides of the land is to be maintained. Generally, self pollinated crops are given comparatively shorter isolation distance than those of the cross pollinated ones. e.g. The isolation distance for rice or wheat is about 3 metre where as that for jute is 20 metre.

5) Field inspection

Field inspection is done by the trained field officer of the seed certification agency.

The inspection starts from pre-seeding till storage of seeds. The frequency of field inspection varies with the crop varieties. Generally, it is 2-3 for cereal crops. Usually the first inspection is done at pre-seeding and the second and third at pre-flowering and pre-harvesting stage of the crop respectively. During this inspection, attention is given more mostly on the varietals identity of the seeds, proper land of seeds, insect pest and disease, rouging and proper stage of harvesting of the crops. Special care is to be taken to keep the crop free from weeds, rouges and attack of insect pest and disease.

6) Harvesting and processing of seeds

All the operation from harvesting to sealing will be done in presence of inspector of the SCA. Harvesting will be done at full maturity of the crop on clear sunny day. Threshing should be done immediately after harvesting. Threshing floor and other equipment should be properly cleaned to avoid contamination. Special care should be taken during harvesting and threshing, to avoid seed injury of any kind. After threshing, the seeds are put in to clean gunny bag and the bag is provided with a provisional label having the following information and sealed:

- Name of grower.
- Grower number.
- Number of variety.
- Lot number.
- Number of bags in the Lot.
- Weight of the seed.

7) Drying and cleaning

The seed contained in the bag with provision label are dried in the sun or by batch dryer in the seed farm. The dried seeds are cleaned properly in seed processing centre. During cleaning; dirty leaves, straw, weed seeds and other foreign material are removed from the seeds.

8) Storing and sampling of seeds

As soon as the cleaning is over, the seeds are bagged labelled with provision label and sealed by the inspector and stored. The Inspector collect seed samples from the seed while bagging. Each sample is divided into 3 parts and labelled and sealed. One part is sent to the seed testing laboratory for analysis. The second part is kept with inspector and the third part is sent to producer of these seeds. If the result of analysis of the SCA, the seeds are certified by the principal seed certification officer and issues certification tags. The inspector performs the work of final labelling, tagging and sealing of each bag. The provisional label may remain side by side. The tagged and sealed bags are then is stored in dry store house. The certification tag remains valid for a period of 8 months from the date of certification. The colour of certification tag is different for different classes of certified seeds. Green colour tag is used for breeder seed; white colour tag is used for foundation seed and blue colour tag is used for certified seed. The substandard emergency seeds are provided with red tag which maybe used by the crop growers when emergency arises.

Seed Certification Agency

Seed Certification Agency (SCA) is the only Govt. authorized body for the quality control of all kinds of Seeds in Bangladesh. SCA has been established in 1974 under Cereal Seed project as per provision of First Five Years plan (1973-78) of the Govt. of Bangladesh.

The SCA is a statutory body authorized to undertake certification of Breeder, Foundation and Certified classes of seeds of released or registered varieties of crops in Bangladesh. The mission of the agency is to make available sufficient quantities of high quality seeds to the farmers that will help them to increase crop productivity and to attain sustainable food security and self sufficiency in the country.

Role and responsibilities of Seed Certification Agency

1. To arrange for suitable application, inspection and report forms.
2. To identify source of breeders seed. That can be used as the basis for further multiplication.
3. Through field inspection, that prescribes the minimum standard for isolation, planting ratio, rouging etc.

4. To assist seed growers and producers in obtaining suitable planting seed.
5. To assist seed producer at the time of harvesting, drying & processing.
6. To draw a seed sample and inspect seed lots & submit such sample to the seed testing laboratory for maintaining the prescribed seed standards.
7. To issue appropriate seed certification tags for seed lots.
8. To maintain adequate records. So that the eligibility of specific lot can be determined in subsequent years.
9. Close working relationship between seed growers, dealers, research personals, government's officials etc.
10. To take appropriate corrective actions against rigorously any violation of prescribed standards or complaints from users of certified seeds.

Role of NSB

1. Advise the Govt. on seed certification standard, seed test and seed analysis method.
2. Advise the Govt. on price fixing for different tests of seed for seed testing laboratories under SCA.
3. Advise govt. for the establishment of seed testing laboratory.
4. Advise govt. for seed multiplication, import and price fixation.
5. Helps govt. for releasing new varieties.
6. Coordinate among seed act, seed ordinance and seed legislation.

Characteristics of different classes of seed

► Breeder seed

1. Available only in small quantities.
2. It is produced under control of the plant breeder.
3. Tag colour of this seed is green.
4. It is used for the production of foundation seed.
5. Genetic and physical purity is 100%.

► Foundation seed

1. It is the progeny of breeder seed.
2. Available in limited quantity.
3. It is produced under control of foundation seed stock organisation.
4. Tag colour of this seed is white.
5. It is used for the production of certified seed.
6. Physical purity is 98%.
7. Genetic purity is 100%.

► Certified seed

1. It is the progeny of foundation seed.
2. Available in large quantities.
3. It is produced under control of certified seed producer.
4. Genetic purity is 99.99%.
5. Physical purity is 98%.
6. It is distributed to the farmers for commercial cultivation.

Field Standard of Rice

Factors	Breeder	Foundation	Certified
1. Isolation distance (in meter)	3.0	3.0	3.0
2. Other crop plants (Max. % by no.)	0.0	0.1	0.2
3. Other varieties	0.0	0.1	0.5
4. Weed plants (obnoxious max. % by no.) a) Wild rice/red rice b) Barnyard grass	0.0	0.01	0.02
5. Plant infected by seed borne disease (max. % of infected plants) General condition of crop; if the field crops severely damaged or lodged and irregularly flowered that makes crop assessment difficult to judge trueness of variety and varietals purity will be rejected.	5.0	10.0	20.0

Seed Standard of Rice

Factor	Breeder	Foundation	Certified
1. Pure seed (Min. % by wt)	99.0	97.0	96.0
2. Inert matter (Max. % by wt)	1.0	1.2	1.3
3. Other seed (Max. % by wt)	Trace	1.0	1.0
a) Other crop seed (max. no. in total; whole sample will be tested)	2/kg	5/kg	10/kg
b) Total weed seed (max. no; whole sample will be tested)	2/kg	8/kg	10/kg
4. Germination (Min. %)	80.0	80.0	80.0
5. Moisture content (max. %)	12.0	12.0	12.0

Field Standard of Wheat

Factor	Breeder	Foundation	Certified
1. Isolation distance (in meter)	3.0	3.0	3.0
2. Other crop plants (max. % by no.)	0.0	0.1	0.2
3. Other varieties (max. % by no.)	0.0	0.1	0.5
4. Weed plants (obnoxious max. % by no.)	0.00	0.03	0.05
a) Lehli			
b) Wild Oat			
c) Wild lentil			
5. Diseases (Infection by seed borne pathogen; max. no of infected loose smut (plants/ha)			
6. General condition of crop; If crop so stunted, damaged or lodged that makes crop assessment difficult to judge the trueness of variety and varietals purity will be rejected.			

Seed Standard of Wheat

Factor	Breeder	Foundation	Certified
1. Pure seed (Min. % by wt)	99.0	97.0	96.0
2. Inert matter (Max. % by wt)	1.0	1.2	1.3
3. Other seed (Max. % by wt)	Trace	1.0	1.0
a) Other crop seed (max. no. in total; whole sample will be tested)	2/kg	5/kg	10/kg
b) Total weed seed (max. no. in total; whole sample will be tested)	2/kg	8/kg	10/kg
4. Germination (Min. %)	85.0	80.0	80.0
5. Moisture content (Max. %)	12.0	12.0	12.0

Field Standard of Jute

Factor	Breeder	Foundation	Certified
1. Isolation distance (in meter)			
a) Field of other varieties of the same species	50.0	30.0	20.0
b) Field of other species	5.0	3.0	3.0
2. Other varieties (max. % by wt)	0.0	0.1	0.2
3. Plants infected by seed borne disease (max. % by no)	0.0	0.1	0.5
4. Crop condition: If crops so weedy, damaged or lodged that makes inspection difficult to judge the trueness of variety and varietals purity, will be rejected.	80.0	80.0	80.0

Seed Standard of Jute

Factor	Breeder	Foundation	Certified
1. Pure Seed (Min. % by wt)	99.0	97.0	96.0
2. Inert matter(Max. % by wt)	1.0	2.0	3.0
3. Other seed (Max. % by wt)	Trace	1.0	1.0
a) Other crop seed (max. No. in total; whole sample will be tested)	2/kg	5/kg	10/kg
b) Total weed seed (max. no; whole sample will be tested)	2/kg	8/kg	10/kg
4. Germination;			
a) Fresh seed (Min. %)	80.0	80.0	80.0
b) Carry over seed (Min. %)	70.0	70.0	70.0
5. Moisture content;			
a) <i>C. Capsularis</i> (max. %)	10.0	10.0	10.0
b) <i>C. Olitorious</i>	8.0	8.0	8.0

Field Inspection

Field inspection is defined as inspection of standing crop in seed field by the seed certification officer or field inspector of SCA to confirm isolation, genetically purity and timely rouging of contamination and other agronomical seed production practices for their fulfilment of prescribed standards (or) norms of SCA.

Objective of Field Inspection

1. Verification of seed source.
2. Verification of cropping history of land for processing season or year.
3. Verification of Isolation.
4. Checking of planting method followed i.e planting ratio, border rows, in case hybrid seed production.
5. Roughing off types, diseased plants and other mechanical contaminants.
6. Guidance to seed growers.

Procedure for Field Inspection

1. Note that field inspections of seed plots be carried without pre intimation to the seed grower so as to ascertain whether the seed grower is regularly carrying roughing and other essential items of work.
2. During 1st Inspection, check all information of about species, variety, stage, source of seed used, (tags, labels, seed bags, cash memo) area of the seed plot registered for certification, cropping history of the seed plot.
3. Visit the seed plot; move on all sides of the plot for confirming whether the seed plot meets isolation requirement. In case of doubt, measure the area of seed plot and also distance between seed plot and contamination field.
4. Draw a rough map of the seed plot showing location.
5. During every field inspection, every part of the seed plot should be covered. For this walk across the seed plot while taking the field counts in all directions. Inspect adjacent fields, waste lands for isolation requirement.
6. Count off types, volunteer plants and other contaminants observed during each count and record them.
7. While taking count, barren rows or long gaps if noticed need not be included in the count.
8. Give guidance to seed producer or his representative about Rogueing, off types plant protection, harvesting.
9. At the end of each inspection field inspector fill inspection report.